

IN THE CLAIMS

1. (Previously Presented) A multilayer article comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

a second layer comprising a polymer comprising carbonate structural units,

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and

a substrate layer comprising a material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, a cellulosic material, and mixtures thereof, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer.

2. (Previously Presented) The article of claim 1 wherein the coating layer comprises a 1,3-dihydroxybenzene selected from the group consisting of unsubstituted resorcinol, 2-methyl resorcinol, and mixtures thereof.

3. (Original) The article of claim 2 wherein the 1,3-dihydroxybenzene is unsubstituted resorcinol.

4. (Original) The article of claim 1 wherein the aromatic dicarboxylic acid is selected from the group consisting of isophthalic acid, terephthalic acid, naphthalene-2,6-dicarboxylic acid, and mixtures thereof.

5. (Original) The article of claim 4 wherein the aromatic dicarboxylic acid is a mixture of isophthalic acid and terephthalic acid.

6. (Original) The article of claim 5 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.25-4.0 : 1.

7. (Original) The article of claim 5 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.40-2.5 : 1.

8. (Original) The article of claim 1 wherein the copolyestercarbonate comprises about 10% to about 99% by weight arylate blocks.

9. (Original) The article of claim 1 wherein the copolyestercarbonate comprises about 60% to about 98% by weight arylate blocks.

10. (Original) The article of claim 1 wherein the carbonate portion of the copolyestercarbonate comprises structural units derived from bisphenol A.

11. (Original) The article of claim 1 wherein the second layer comprises a bisphenol A polycarbonate.

12. (Previously Presented) The article of claim 1 wherein the second layer further comprises a colorant selected from the group consisting of dyes, pigments, metal flakes, and glass flakes, and mixtures thereof.

13. (Previously Presented) The article of claim 1 wherein the adhesive layer comprises a polyurethane comprising structural units derived from a polyol selected from the group consisting of polyether polyols, polyester polyols, polytetramethylene ether glycol, hexamethylene glycol, polyols based on polybutadiene, and mixtures thereof.

14. (Original) The article of claim 13 wherein the polyurethane comprises structural units derived from methylene diphenyl diisocyanate or methylene bis(cyclohexyl) diisocyanate.

15. (Original) The article of claim 1 wherein the polyurethane comprises an aliphatic polyurethane film.

16. (Previously Presented) The article of claim 1 wherein the polyurethane comprises a block copolymer comprising a thermoplastic polyurethane block and a block comprising structural units derived from styrene.

17. (Original) The article of claim 16 wherein the block comprising structural units derived from styrene comprises a hydrogenated styrene-diene block.

18. (Cancelled)

19. (Previously Presented) The article of claim 1 wherein the alkenyl aromatic compound comprises structural units derived from styrene.

20. (Cancelled)

21. (Previously Presented) The article of claim 1 wherein the multilayer article exhibits a ninety-degree peel force of at least 1750 Newtons per meter.

22. (Previously Presented) The article of claim 1 wherein the substrate layer comprises a thermoplastic resin selected from the group consisting of polyarylene ethers, polyphenylene ethers, homo- and copolymeric aliphatic olefin and functionalized olefin polymers, polystyrenes; and blends thereof.

23 - 26. (Cancelled)

27. (Previously Presented) The article of claim 1 wherein the coating layer has a thickness of about 2-2,500 microns; the second layer has a thickness of about 2-2,500 microns; and the adhesive layer has a thickness of about 8-2,500 microns.

28. (Cancelled)

29. (Previously Presented) A multilayer article comprising:
a coating layer comprising a block copolyestercarbonate comprising structural units derived from unsubstituted resorcinol, a mixture of isophthalic acid and terephthalic acid, and bisphenol A;

a second layer comprising a bisphenol A polycarbonate optionally containing at least one colorant,

an adhesive layer comprising a resinous copolymer and comprising an adhesive material selected from the group consisting of a polyurethane; an aliphatic polyurethane film; thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and a block comprising structural units derived from styrene; , wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, wherein the resinous copolymer is compatible with the adhesive material, and

a substrate layer selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, and a cellulosic material;

wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer; and wherein the multilayer article exhibits a ninety-degree peel force of at least 700 Newtons per meter .

30. (Previously Presented) A film assembly comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

a second layer comprising a polymer comprising carbonate structural units, and

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material.

31. (Previously Presented) A film assembly comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from unsubstituted resorcinol, a mixture of isophthalic acid and terephthalic acid, and bisphenol A;

a second layer comprising a bisphenol A polycarbonate optionally containing at least one colorant, and

an adhesive layer comprising a resinous copolymer and comprising an adhesive material selected from the group consisting of a polyurethane; an aliphatic polyurethane film; thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene,

wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, wherein the resinous copolymer is compatible with the adhesive material.

32. (Previously Presented) A method for making a multilayer article comprising a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and a aromatic dicarboxylic acid, a second layer comprising a polymer comprising carbonate structural units, an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and a substrate layer comprising a material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, and a cellulosic material, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer;

which method is selected from the group consisting of

the method (i) comprising preparing an assembly of the coating layer and the second layer, and combining the assembly with the separate adhesive layer and the substrate layer;

the method (ii) comprising preparing an assembly of the coating layer and the second layer, forming the adhesive layer adjacent to the substrate layer, and combining the assembly with the adhesive layer / substrate layer combination; and

the method (iii) comprising preparing an assembly of the coating layer, the second layer, and the adhesive layer, and forming the assembly adjacent to the substrate layer.

33. (Previously Presented) The method of claim 32 wherein the assembly of the coating layer and the second layer is formed by coextrusion.

34. (Previously Presented) The method of claim 32 wherein forming the assembly adjacent to the adhesive layer is performed by extrusion coating, lamination, or compression molding.

35. (Previously Presented) The method of claim 32 wherein the coating layer comprises a 1,3-dihydroxybenzene selected from the group consisting of unsubstituted resorcinol, 2-methyl resorcinol, and mixtures thereof.

36. (Original) The method of claim 35 wherein the 1,3-dihydroxybenzene is unsubstituted resorcinol.

37. (Original) The method of claim 32 wherein the aromatic dicarboxylic acid is selected from the group consisting of isophthalic acid, terephthalic acid, naphthalene-2,6-dicarboxylic acid, and mixtures thereof.

38. (Original) The method of claim 37 wherein the aromatic dicarboxylic acid is a mixture of isophthalic acid and terephthalic acid.

39. (Original) The method of claim 38 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.25-4.0 : 1.

40. (Original) The method of claim 39 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.40-2.5 : 1.

41. (Original) The method of claim 32 wherein the copolyestercarbonate comprises about 10% to about 99% by weight arylate blocks.

42. (Original) The method of claim 32 wherein the copolyestercarbonate comprises about 60% to about 98% by weight arylate blocks.

43. (Original) The method of claim 32 wherein the carbonate portion of the copolyestercarbonate comprises structural units derived from bisphenol A.

44. (Original) The method of claim 32 wherein the second layer comprises a bisphenol A polycarbonate.

45. (Previously Presented) The method of claim 32 wherein the second layer further comprises a colorant selected from the group consisting of dyes, pigments, metal flakes, and glass flakes.

46. (Previously Presented) The method of claim 32 wherein the polyurethane comprises structural units derived from a polyol selected from the group consisting of polyether polyols, polyester polyols, polytetramethylene ether glycol, hexamethylene glycol, and polyols based on polybutadiene.

47. (Original) The method of claim 46 wherein the polyurethane comprises structural units derived from methylene diphenyl diisocyanate or methylene biscyclohexyl diisocyanate.

48. (Original) The method of claim 32 wherein the polyurethane comprises an aliphatic polyurethane film.

49. (Previously Presented) The method of claim 32 wherein the adhesive layer comprises a block copolymer comprising a block comprising structural units derived from styrene, and a block comprising the polyurethane, wherein the polyurethane is thermoplastic polyurethane.

50. (Original) The method of claim 49 wherein the block comprising structural units derived from styrene comprises a hydrogenated styrene-diene block.

51. (Cancelled)

52. (Previously Presented) The method of claim 49 wherein the alkenyl aromatic compound comprises structural units derived from styrene.

53. (Cancelled)

54. (Currently Amended) The method of ~~claim 53~~ claim 32 wherein the ninety-degree peel force of at least 1750 Newtons per meter.

55. (Previously Presented) The method of claim 32 wherein the substrate layer comprises a thermoplastic resin selected from the group consisting of polyarylene ethers, polyphenylene ethers, homo- and copolymeric aliphatic olefin and functionalized olefin polymers, polystyrenes, and blends thereof.

56 - 59. (Cancelled)

60. (Previously Presented) The method of claim 32 wherein the coating layer has a thickness of about 2-2,500 microns; the second layer has a thickness of about 2-2,500 microns; and the adhesive layer has a thickness of about 8-2,500 microns.

61. (Cancelled)

62. (Previously Presented) The article of claim 22 wherein the thermoplastic resin is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

63. (Previously Presented) The article of claim 22 wherein the thermoplastic resin comprises thermoplastic polyolefin.

64. (Currently Amended) The method of claim 32,
wherein the block copolyestercarbonate further comprises structural units derived from bisphenol A,

wherein the 1,3-dihydroxybenzene comprises unsubstituted resorcinol,

wherein the aromatic dicarboxylic acid comprises a mixture of isophthalic acid and terephthalic acid,

wherein the polymer is a bisphenol A polycarbonate, and

wherein the adhesive material is selected from the group consisting of an aliphatic polyurethane film; a thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene; and

~~wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material.~~

65. (Previously Presented) The method of claim 55 wherein the thermoplastic resin is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

66. (Previously Presented) The article of claim 55 wherein the thermoplastic resin comprises thermoplastic polyolefin.

67. (Previously Presented) A multilayer article comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and

a substrate layer comprising a substrate material selected from the group consisting of homo- and copolymeric aliphatic olefin and functionalized olefin polymers,

wherein the adhesive layer is disposed between the coating layer and the substrate.

68. (Previously Presented) The article of claim 67 wherein the substrate material is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

69. (Previously Presented) The article of claim 67 wherein the substrate material comprises thermoplastic polyolefin.

70. (Previously Presented) The article of claim 67 wherein the resinous copolymer comprises an elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer.

71. (Previously Presented) The article of claim 70 wherein the elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer is a block copolymer comprising polystyrene end blocks and a vinyl-bonded, polyisoprene-rich middle block.

72. (Previously Presented) The article of claim 70 wherein the elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer is hydrogenated.

73. (Previously Presented) A multilayer article comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

an adhesive layer comprising a block copolymer comprising a polyurethane block comprising a structural unit derived from a polyurethane and a styrene block comprising a structural unit derived from styrene, and

a substrate layer comprising a material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, a cellulosic material, and mixtures thereof,

wherein the adhesive layer is disposed between the coating layer and the substrate.

74. (Previously Presented) The article of claim 73 wherein the substrate material is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, polystyrene, polyarylene ether, polyphenylene ether, and blends thereof.

75. (Previously Presented) The article of claim 73 wherein the substrate material comprises thermoplastic polyolefin.